a quarterly on Jainology

jain journal

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JAIN BHAWAN

CALCUTTA

VOL. XIII OCTOBER 1978 NO. 2

Rupees One & Paise Fifty

All contributions, which must be type-written, and correspondence regarding contributions and book-reviews should be addressed to the Editor, Jain Journal, P-25 Kalakar Street, Calcutta-7.

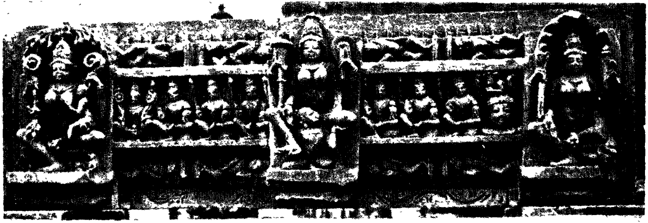
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Published by Moti Chand Bhura on behalf of Jain Bhawan from P-25 Kalakar Street and printed by him at The Technical & General Press, 17 Crooked Lane, Calcutta-69.

Editor : Ganesh Lalwani

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Plate :



A Door-lintel with figures of Cakresvari, Ambika, Padmavati Yaksis and Navagrahas
Archaeological Museum, Khajuraho (Acc No 1467)
courtesy. American Institute of Indian Studies, Varanasi

Perspectives of System-Theoretic Technique in Jaina School of Mathematics Between 1400-1800 A.D.

L. C. JAIN

Synopsis

The present paper describes the historical and singlehanded attempts made in the Jaina School of Mathematics, isolated from the current drift, during 1400-1800 A.D. They were made towards the formulation and modification of the abstract approach for solving the problems regarding the behaviour and controllability of the systems dealing with the observables and the non-observables. The systems came under the purview of the *Karma* theory.

The contributors are Nemicandra (c. 16th century A.D.) and Todaramala (c. 1720-1767 A.D.). The contributions are in the form of Sanskrit and Dhundhari commentaries, respectively published round about 1919.

The system-theoretic technique is founded on the set-theoretic approach, gradually developed through symbols with operational details, between the bios and matter, of input, state and output over values and maps. Then it manipulates the phenomena of bonds, subsistence, rise, decay, etc., through changes in configurations, mass-numbers, energy-levels and life-times in relation to operations. The technique handles ultimately the phenomena of reachability through controls of bios over its automation, as well as those of annihilation and simultaneous process of realization.

1. *Historical Introduction to Source Material*

The system-theoretic material owes its origin to two monumental texts of the Sauraseni Jaina scriptures :

(i) The first is the *Kaṣāya-pāhuḍa Sutta*[1] by Gunadhara (c. 1st century A.D.) consisting of 233 verses. This was produced from the third *pāhuḍa*,

1.(a) Gunadhara, *Kasaya-pahuda Sutta* with *Curni Sutra* of Yativrsabha, trans. and ed. by Pt. H.L. Jain, Calcutta, 1955.

(b) *Jayadhavala* commentary of the above from D. Jaina Sangha, Mathura, Vol. 1-13, 1944.

'*Pejjadosa*' of the tenth *Vastu* of the fifth *Pūrva*, '*Jñāna Pravāda*' of the fourth *Aṅga* of the scripture. Yativrsabha (c. 473 A.D.-609 A.D.) compiled about 7009 verses of *Cūrṇi Sūtras* on the text. Virasena (c. 816 A.D.) could compile an incomplete *Jaya Dhavalā* commentary of 20000 verses on this work, which was completed by Jinasena (c. 837 A.D.) in 40000 additional verses. Nemicandra Siddhantacakravarti (c. 11th century A.D.) abstracted from the above works, a text known as the *Labdhisāra* (with *Kṣapanāsāra*,[2] consisting of 649 verses This was commented upon by Kesava Varni (perhaps in Kannada) of the 14th century A.D. A Sanskrit commentary of the *Labdhisāra*, known as *Jivatattva-Pradīpikā*, is available as a translation (perhaps by Nemicandra of the 16th century A.D. who was a disciple of Jnanabhusana. A Sanskrit commentary of the *Kṣapanāsāra* by Madhavacandra Traividya (c 1203 A.D.) is also available. Todaramala (c. 1761 A.D) compiled his *Samyakjñānacandrikā* commentary in Dhundhari on the *Labdhisāra-Kṣapaṇāsāra* in about 13000 sentences

(ii) The second is the set of the *Satkhandāgama* texts[3] (including the *Mahābandha* or *Mahādhavalā* texts) by Dharasena's disciples, Puspadanta and Bhutabali (c. 2nd century A.D), available in 23 volumes with commentary and translation in Hindi. The set was produced from 24 *Anuyoga-dvāras* of the 4th *Prābhṛta*, '*Karma Prakṛti*' of the 5th *Vastu*, '*Cayana-labdhi*' of the second *Pūrva*, '*Agrāyaṇī*' of the 4th *Pūrvagata* of the 12th *Aṅga*, '*Dṛṣṭivāda*' of the scripture. The commentaries on this set by Kundakunda, Syamakunda, Tumbulura, Samantabhadra and Bappadeva are not available. However, the *Dhavalā* commentary by Virasena consists of 72000 verses Nemicandra Siddhantacakravarti abstracted from the above text, the *Gommatasāra*[4] (*Jīvakānda* in 734 verses and *Karmakāṇda* in 972 verses). A commentary *Mandabodhaprabodhinī* by Abhayacandra Saidhanti (c. 13th century A.D.) and a commentary, '*Jīvatattvapradīpikā*'

2.(a) Nemicandra Siddhantacakravarti, *Labdhisara* (with *Ksapanasara*), trans. and ed by Pt M L. Shastri, Bombay, 1916

(b) *Gommatasara*, *Labdhisara* along with *Jivatattvapradipika*, *Mandabodha-prabodhini* and *Samyakjnanacandrika* commentaries, ed by Pt G L. Jain and S L Jain, Calcutta, (circa 1919). *Jivakanda*, p. 1329, 29 × 20 SC *Karmakanda*, p. 1200, 29 × 20 SC . *Labdhisara*, p 973, 25 × 19 SC. These include two chapters on *Arthasamdrsti* of the *Gommatasara* (p 308) and that on the *Labdhisara* (p. 207).

3.(a) *Satkhandagama* by Puspadanta and Bhutabali, Books 1-16 along with *Dhavala* commentaries by Virasena, edited with trans. by Dr. H L Jain, Amaraoti and Vidisha, 1939-59

(b) *Mahabandha* by Bhutabali, Books 1-7, Kashi, 1947-58

4.(a) *Gommatasara*, *Jivakanda* and *Karmakanda*, ed. with Eng trans by J. L. Jain, (*Sacred Books of the Jainas*), Arrah, 5, 6, 7, 1927, 1937.

(b) Hindi Trans. by Pt. M. L. Shastri, Bombay, 1927-28; Cf. also 2(b).

in Kannada by Kesava Varni have been mentioned. However the available one is the combined Sanskrit from the both in separate forms by Nemicandra, disciple of Jnanabhusana. Todaramala compiled on the above basis his *Samyakjñānacandrikā* commentary in Dhundhari, consisting of about 50000 sentences.

2. *Preface to the System-Theoretic Technique*

The present author[5] has already contributed two introductory papers on the mathematical system theory in Prakrit texts. The system theory is based on the set-theoretic approach on which he[6] has also contributed three papers. The set theoretic approach, however requires to be supplemented with the logical foundations of the set theory embedded in the *Dhavalā* commentary.[7] Thus before the development of the sysmbolic expressions for the system-theoretic measures, the logical approaches to the semantic technique of expressing the measures need description. Only the important material in this regard is proposed to be exposed here from the *Dhavalā* texts.

5 (a) Jain, L C., 'Mathematical Foundations of Jaina Karma System' published in *Bhagavan Mahavira and his Relevance in Modern Times*, Bikaner, 1976, p. 132-50 (Symposium).

(b) Jain, L C., 'System Theory in Jaina School of Mathematics', manuscript sent for publication.

6.(a) Jain, L. C., 'Set Theory in Jaina School of Mathematics', *I. J H S.*, Vol. 8 Nos. 1 & 2, 1973, pp 1-27.

(b) Jain, L.C., 'On Certain Topics of the *Dhavala Texts*', *I.J.H.S.*, Vol. 11 No. 2, 1976, pp. 85-111

(c) Jain, L. C., 'Divergent Sequences locating Transfinite Sets in Trilokasara', *I.J H S.*, Vol. 12. No. 1, 1977, pp 57-75.

7. The logical foundations of the Jaina school has been laid in the following verses of Umasvati :

nāmasthāpanā dravya bhāva tastannyāṣah 5
pramāṇa nayairadhigamah 6
nirdeśasvāmitvasādhanādhikaraṇasthiti vidhānatah 7
satsamkhyākṣetrasparśana kālāntara bhāvālpabahutvaiśca 8

Cf.(a) *Reality*, Eng. Trans. of *Sarvarthasidhi* of Pujyapada by S.A. Jain, Calcutta, 1960, pp. 8-15 (*Tattvarthasutra*, ch. I). The logical approach adopted by Yativrsabha is as follows .

ṇāṇāppavādassa puvvassa dasamassa vatthussa
tadiyassa pāhuḍassa pañcaviho uvakkamo
tam jahā āṇupuvvi ṇāmam pamāṇam
vattavvadā atthahiyāro cedi 2
Cf. 1(a), p. 2, the nikṣepas 7 and nayas are described in pp. 16-40.

Much of the foundational material is available in the *Dravya-pramāṇānugama*,[8] the knowledge of the measure of the fluents, which is

Further logical grip is laid by Virasena in the following He begins with indications:

kevala ṇāṇujjoiyachaddava manijjayam pavāihi
ṇamiūṇa jiṇam bhaṇimodavvaṇiogam gaṇiyasāram 1

Motivation and arguments are given as under :

arasamarūvamagandham avvattam cedaṇāguṇamsaddam
jāṇa aliṅgaggahaṇam jīvamaṇḍidditthasaṇṭhāṇam 1
puḍhavī jalam ca cāyā caurindiyavisaya-kammaparamāṇu
cavviha bheyam bhaṇiyam poggaaladavvam jinavarehim 2
nayopanayaikāntānām trikālānām samuccayah
avibhrāṅbhāvasambandho dravyamekamanekadhāh 3
eyadaviyammi je attha pajjāyā vayaṇapajjayā cāvi
tīdāṇāgadabhūdā tāvadiyam tam havadi davvam 4
nāṇātmatā maprajahattadekamekātmatā maprajahacca nānā
aṅgāṅgibhāvāttava vastu yatat krameṇa vāgvācyamanantarūpam 5
ṇāmamtthavaṇā davıyam sassadu gaṇaṇāpadesıyamaṇantam
ego ubhayādeso vitthāro savvabhāvo ya 8
pūrvāparaviruddhādervyapeto doṣa samhate
dyotakah sarvabhāvānāmpatavyāhṛtirāgamah 9
avagayaṇivāraṇattham payadassa paryūvaṇanimittam ca
samsayaviṇāsaṇattham taccatthavadhāraṇattham ca 12
jatthabahūjāṇejjo aparımidam tatha ṇıkkhive sūrī
jattha bahū a ṇa jāṇai cautthavo tattha ṇıkkhevo 13
pramāṇa-nayanikṣepairyorartho nābhisamīkṣyate
yuktam cāyuktavadabhāti tasyāyuktam ca yuktavat 14
jñānam pramāṇamītyāhurupāyo nyāse uccyate
nayo jñāturabhiprayo yukti toartha parigrahah 15
suhuno ya havadi kālo tatto ya suhumdaram havadi khettam
aṅgula-asamkhabhāge havanti kappā asamkhejjā 17
auhumam tuhavadikhettam tatto ya suhumadaramhavadidavvam
khetaṅgulāaṇantā ege davvaṅgule honti 18
dhammādhammāgāsā tiṇṇivi tullāṇi honti thovāṇi
vaḍḍhīdu jīvapoggalakālāgāsā aṇantaguṇā 19
logāgāsa padese ekkekke ṇikhevevi taha diṭṭham
evam gaṇijjamāṇe havanti logā aṇantā du 23

Cf 3(a), book 3, pp. 1-33. For a few details, cf. (b) :

Singh, A. N., *Mathematics of Dhavala-I, Satkhandagama*, book 4(1942), pp. v. xxi, and (c) :

Jain, L. C., 'On the Jaina School of Mathematics', *Babu Chotelal Smrti Grantha*, Calcutta, pp. 265-292, 1967.

A receent work gives historical development of Jaina logic : *Jain Nyaya-ka Vikas*, by Muni Nathmal, Jaipur, 1977.

8. Cf. 3(a), book 3, pp. 1-63, cf. also 6(b).

fundamental to the *Karma* system theory. This knowledge is imparted through four types of measures : fluent (*dravya*), time (*kāla*), field (*kṣetra*) and phase (*bhāva*). The fluent measure is of three types : numerate, innumerate and infinite. Further details are available. The time measure is mainly of the following types : instant (*samaya*), trail (*āvali*), *muhūrta*, etc. ; *palya*, *sāgara*, *utsarpiṇī*, *avasarpiṇī*, *kalpa* and various types of periods counted on the basis of periodic changes in structural sets of various objects (*parāvartana kāla*). The field measure is of the following types : point (*pradeśa*), *skandha* (formed of the ultimate particles) and those based on the points contained in the finger and world line in linear, areal and cubic measures. The phase measure is the simultaneous measure of the above.

Virasena relates the measures of the sets of the bios in different control (*guṇa*) stations (*sthāna*), and way-ward (*margaṇā*) stations through the above method.[9] These tables form the tool of the system-theoretic technique. Similarly the measures of the structural karmic sets of matter in form of configuration (*prakṛti*), mass numbers (*pradeśa*), energy-level (*anubhāga-aṁśa*), and life-time (*sthiti*) become the tools of the technique in the following texts.[10]

The state (*sattva*) is given in the form of a triangular matrix (*trikoṇa yantra*), the input (*āsrava*) values are in the form of columns and the output (*nirjarā*, etc.,) values are in the form of rows. The operators are usually *yoga* and *moha* as well as time. Apart from these are the phase operators of a bios, which are perturbation factors accelerating or retarding the process and upsetting the very state structures.[11] Later we shall see that the operators[12] known as the low-tended (*adhah-pravṛtta*), the unprecedented (*apūrva*) and the invariant (*anivṛtti*) play a fundamental role in perturbing the states—structures, the bond-structures and the rise and annihilation processes of the karmic phenomena measured through the tetrad already shown.

The semantics, devoid of the symbolic technique, before the 15th century A.D. can be easily located from the treatment of the following topics. The six parts[13] of the *Saṭkhaṇḍāgama* are : bios stations,

9. Cf. 3(a), books 3 and 4. Cf. also Kremyansky, V., 'Principel of Unity Control, Controllability and Self Organization in Biology' in *Philosophical Aspects of Biology*, Moscow, 1974, pp. 122-29.

10. Cf. 3(a) and (b) and 1(a) and (b).

11. Cf. 5(a) and (b).

12. Cf. 2(b).

13. Cf. 3(a). Cf. also Frantisek Cizek, 'Some Methodilogical Problems of Systematic Classifications', *A.H.R.N.N.T.*, Prague, 1977, no. 10, pp. 21-37.

minor-bond, bond-ownership consideration, sensation, vector (*vargaṇā*) and major-bond. The fourteen stations of the bios are called control stations due to *yoga* and *moha*. The fourteen way-ward stations are classified on the basis of certain characteristic properties of different sets of bios.

In what follows the names of the topics represent the extension of the experessions through the semantics needed for the exposition of the *Karma* system theory :

The *Satkhaṇḍāgama* texts begin with the representation of existence (*sat*), number of fluent measure (*saṁkhyā* or *dravyapramāṇānugama*), field (*kṣetra*), contact (*sparśa*), time, lag (*antara*) phase, and comparability (*alpabahutva*). Then topologies (*cūlikās*) are introduced : configuration, station, first, second and third long verses (*mahādaṇḍakas*), greatest life-time, least life-time, sameliness generation (*samyaktvotpatti*), transit (*gati-āgati*).

The second part is on the minor bonds

The third part is on the consideration of the owner of bonds. There are twenty-four topics : activity (*kṛti*), sensation (*vadana*) contact, action (*karma*), configuration, bonding, co-bonding (*nibandhana*), prosequence (*prakrama*), subsequence (*upakrama*), rise (*udaya*), realization (*mokṣa*), trans-sequence (*saṁkrama*), complex (*leśyā*), complex action, complex effect, pleasure-cum-non-pleasure, long-short, incarnation-conception (*bhavadhāraṇīya*), material assimilation (*pudgalātta*), *nidhatta anidhatta nikācita anikācita*, *karma* life-time, ultimate karmic existence (*paścima skandha*), comparability.

The fourth part is on the sensation, based on the sixteen topics : abject (*nikṣepa*), stand-point clarification (*nayavibhāṣaṇatā*), name-regulation (*nāma-vidhāna*) ; regulations of fluent, field, time, cause, ownership, sensing, transit, lag, combinatoral, quantity, part-cum-nonpart, and comparability. Detailed description is also based on the ownership of the sensation with respect to fluent, field, time and phase.

The fifth part is on the vectors. This is divided into three sub-sections : (1)contact (2) *karma*, (3) configuration. The contact section is described in thirteen types of contacts : name, abject, fluent, unity-field, consequent-field, partial contact, skin, all, touch, *karma*, bond, reachable, phase. The *karma* section is of ten types : name, abject, fluent, experiment, mutual (*samavadāna*), lower, way-movement, austerity, activity and phase. The section on configurations details the original and suboriginal types

of configurations. The bonding is then described under four topics : bond, binder, bindable, and bond-regulation. On the bindables we find twenty-three types of vectors.

The part six is the *Mahābandha*[14] which is represented in the following sections : configuration, all-bond, non-all-bond, greatest bond and non-greatest bond, least bond and non-least bond, quantity, field, contact, time, lag, phase, and comparability. The life-time bond is further described through arm-form, term-abject, and increment.

The semantics of the *Kasāya-pāhuda Sutta*,[15] appear to have deeper and endless implications, exposed by the *Cūrni-sūtras* of Yativrsabha. They are simply sometimes informative, in question form, and in grammatical form. The sections discussed by Yativrsabha on the basis of the above are : pro-affection and anti-affection division ; configuration, lifetime, energy-level, and mass-number division ; weak life-time and non-weak life-time ; bond ; transmutation ; sensitive (*vedaka*) ; adherence (*upayoga*) ; four stations (of energy levels), consonants, subsidence and annihilation of perceptive attachment, regulator-cum-non-regulator realization, subsidence and annihilation of disposable attachment (*moha*), and the post-atomic (*paścima skandha*).

The *sūtras* used to be composed for the use of the Acaryas who were either pronouncers, lecturers or readers, and the traditional teaching went on through questions answers here and through doubts and explanations in the *Dhavalā* period. Two types of the *sūtras* draw our attention : (1) *Vṛtti sūtras*[16] are those whose word composition is abbreviated, and in which non-remaining meanings or measures implied in the *sūtra* have been collected. The *cūrni* term [17] has been defined as that which has a poly-meaning, propounds a great meaning, is full of motivation, origination and prefix, is deep, comprehensive of many views, non-contradictory, and is made non-falacious through ways of learning and

14. Cf. 3(b).
15. Cf. 1(a) and (b).
16. Cf. 1(a), intro., p. 15.
suttaseva vivaraṇāya samkhittasaddarayaṇāye
saṅgahiya suttā sesatthāye vittisuttavavaesādo
—*Jayadhavala*, A.P. 52.
17. Cf. *Ibid.*, p. 16
atthabahulam mahattham hetu nivāovasagga gambīram
bahupāyabhavocchinnam gamnaya suddham tu cunnapayam
—*Abhidhana Rajendra Kosa.*

determinant. (2) The *Cūrni sūtras*[18] also carry the implications of a *bīja*, i.e. a word composed through brevity of words, motivating the knowledge of endless meanings, consistent with various types of symbols. Thus it appears that the scientific revolution of the awakening era in India in Jaina school was more or less a phenomenon of paradigm-shift.

The style of putting forth the *sūtra* is extended by Virasena in the following types of verses : introduction, chapter, doubt, question, description, dedication, conclusion.[19] The *Cūrṇi sūtras* carried the words : *bhāṇiyavvā*, *nedavvā*, *kāyavvā*, *parūveyavvā*, as if they were meant for the pronouncers and lecturers The style of their composition carried only the meaningful words with numerals, a style which is seen to be extended further by Virasena In the *Tiloyapaṇṇattī* also, the words and terms are denoted by numerals and abbreviated symbols [20] The *Cūrṇi sūtras* consisted of the material which was not available in texts and lay with the preceptors, Aryamanksu and Nagahasti Aryamanksu had *prabāhyamāna* material, while the latter had *aprabāhyamāna*.[21] Yativrsabha was taught by both the ascetics

The mathematical foundations were exposed in the *Tiloyapannattī* (5677 verses, with a few prose passages)[22] by Yativrsabha This deals with cosmography, rather an abstract mathematical universe needed for a system theoratic representation of the structural sets involved in the *Karma* theory. Virasena adopts a prose style in exposing the first five parts of the *Saṭkhaṇḍāgama*, leaving the sixth He starts his *Jayadhavalā* commentary in the same style as that adopted in the *Dhavlā*. The logical approach is through sentences, somewhere consisting of geometrical forms[23] and detailed through numerical symbolism The sentential

18 Cf. Ibid , pp. 16, 17.

saṃkhitta saddarayaṇamaṇaṇantatthāvagama
hedubhūdānegaliṅgasaṅgaya bīja padam nāma
--*Dhavala*, A.P. 536.

The word "Bīja" occurs as follows ·

sesāṇam pi kammāṇamedeṇa bija padeṇa ṇedavvam
--*Sthiti Su.* 342

Cf. also, 'The problem of Comparing Succeeding Paradigms' by R. S. Metzger, pp. 13-19, *Proc of XIII Int. Cong of the Hist of Sc. and Tech.*, Moscow, 1974, sec. I Cf. also *Ibid* , pp. 25-30.

19. Cf. 3(a). This style is round at several places in the *Dhavala* texts.

20 Jain, L C., 'Tiloyapannatti ka Ganit', Mathematical Intro. to *Jambudiva-pannatti Samgaho*, Sholapur, 1958, pp. 1-109

21. Cf 1(a), pp. 8-9

22. *Tiloyapannatti* of Yativrsabha, (a) Pt. I, 1943, (b) Pt II, 1951, Sholapur.

23. For example, 3(a), book 10, pp. 124, 136, 128, 129, 149, 421, 424, 425, 427, 428, 430.

logic is predominant in these works. Several mathematical entities are subjected to doubts and explained by Vırasena (specially in Books 3, 4, 10, 12 and 14). They are extensively detailed through messure (*pramāṇa*), objectification (*nikṣepa*), and determinant (*naya*).[24] The theory of poly-ends (*anekāntavāda*) deals with the descriptive part, and the relativitism (*syādvāda*) refers to the terminological aspect. The *anekāntavāda* strives to incorporate the truth of all systems with its two organs : *nayavāda* and the *syādvāda*

Nemicandra Siddhantacakravarti, however, abstracted all above texts in the summarised form of texts, motivated for the study by laymen who could not spare time in the study of the logic and its application to the *Karma* theory[25] which was exposed in voluminous texts. He composed the material with least of logical and foundational material. He highlighted more of the material detail which seems to have required syncopated and symbolic exposition by the posteriority. Hence the commentaries seem to have taken a new turn after these works were recomposed by Nemicandra. His own disciples, Camundarai and Madhavacandra Traividya engaged themselves in writing, perhaps symbolic details with algebraic forms if we take it for granted that their predecessors, like Kundakunda, did not initiate such a commentary with algebraic symbolism, as he is known to have composed the '*Parikarma*' a commentary of the first few chapters of the *Satkhaṇḍāgama*. However, the *Tiloyapaṇṇatti* contains some algebraic symbols of measures and operators in syncopated form.[26] Thus one may infer that the style of extending algebraic symbolism gained strength from Kesava Varni to Todarmala and

24 Cf Mahalanobis, P. C, (1954), 'The Foundations of Statistics', *Dilectia*, 8, pp 95-111. Cf. also Haldane, J B S., 'The Syadvada System of Predication', *Samkhya*, *I.J.S.*, vol. 18, pp. 195-200, pts 1 and 2, paper recd 1956 However, the problem is whether the *Syadvada* claims probability ? Cf Roger Hahn, 'Determinism and Probability in Laplace's Philosophy', *Proc of the Int Cong. of Hist. of Sc. and Tech.*, Moscow, 1974, sec 1, pp. 170-75. Cf. also *Ibid.*, pp 53-62, 92-95. It appears that the *Nayavada* is similar to the Russell's theory of perspectives. Cf. Russell, B. *Our Knowledge of the External World*, London, 1926, p. 96. It also appears that *Nayavada* is primarily conceptual and the *Syadvada* synthetic and mainly verbal, bringing the theory of coherence of A. N. Whitehead in its neighbourhood For, according to Whitehead, coherence means that the fundamental ideas presuppose each other, and in isolation they are meaningless, bringing it in the neighbourhood of *Anekantavada*. Cf. Whitehead, A. N., *Process and Reality*, Pt. II (Harper), 1960, ch. x, sec. 1. Such a coincidence is inevitable for the fact that the Jaina School of Mathematics required the Mathematical Logic as well as the sentential one for its *Karma* system theory based on the naive set theory of their own.

25. Cf. 2(a), (b) and 4(a).

26. Cf. 20 and 22(a), (b).

not thereafter.[27] These works require coordinated historical cryptanalysis through modern techniques and computers.

3. System-Theoretic Tools and Technique of the Jīvatattva Pradīpikā

Gommatasāra (Jīvakānda) :[28] This commentary follows the text, verse after verse. It does not start with any introductory chapter on algebraic or numerical symbolism, although they are introduced as they are to appear in their own turn. This mainly gives the various types of measures (*dravya, kṣetra, kāla, bhāva*) of bios in fourteen control stations and fourteen way-ward stations in *tabular* or *isolated* expressions (vv. 3-65) through the symbolism algebraic and numerical, and some times geometrical. The measures of the phases of a bios in the low-tended, unprecedented and invariant operational states are tabulated (vv. 32-44). These form arithmetical sequences of phases appearing at different instants of the *antaramuhūrta* sequence. A refinement over the above is the protract (*anukṛṣṭi*) structure which is tabulated (v 49). Combinatorial situations of negligence are tabulated in various ways (vv. 32-44).

The tables for *sūkṣmasāmparaya* control station begin with some new symbols, and they detail the decay of karmic matter in geometric sequence (v. 59), (*guṇaśreṇi*). The decay is in form of nisusus (*niṣekas*) whose values are given at various instances through the tetrad of measures. This is the output type mapping (v. 60). Similar is the input type of mapping of karmic mater in the geometric series-length.

The space occupied by a bios is its *avagāhanā*. This is described through tables in a separate symbolism (other than that for karmic details) (vv. 94-117).

The description of the universal and post-universal measures and mathematics appear.[29] Important talbes for the divergent sequences locating and infinite sets are given.[30] Tables for logarithm to the base two and those for log of log of the simile (*upamā*), measures of sets of instants and points are given, (vv. 153 et seq., and 204 et seq.)[31]

The topic on volition (*yoga*) way-ward station contain important tables on instant-effective-bond (*samaya-prabadha*) in different types of bodies of a bios. These are splitted into geometric regressions (*guṇahānis*) and mutual-product (*anyonyābhyasta*) structures, (vv. 216-258).[32]

27. Cf. 2(b).
28. Cf. *Ibid*
29. Cf. 6(a) and (b), 7(b) and (c).
30. Cf. 6(b) and (c)
31. Cf. 6(a).
32. Cf. 5(a), (b).

The state (*sattva*) triangular matrix gives the existent karmic matter in form of nisusus with different life-time arranged in separate columns of present and past instants, fed at every instant at the right by a multiple of instant-effective-bond, and exhausted every instant by similar changed amounts at the bottom horizontal row.[33] This gives an equation of motion of the system in a constant or otherwise condition. Tables for methods of summation of such constant-state matrices are available.[34] Then the tables for various measures of knowledge and the corresponding obscuring karmic material are tabulated (vv. 299-464). Tables for complex wayward station also appear (vv. 537-550).

A table gives the measures of various types of fluents A big table appears for 23 types of vectors (*varganās*) which have mathematical structures (vv. 596-619).[35] Then is the table for the measures of the terms (*padārthas*) i.e the system theoretic fluents, inputs, outputs, states, bonds, rise, decay etc. as a total picture (vv. 643-645).

Gommatasāra (*Karmakānda*) :[36] Here are compiled tables for karmic material and their tetrads, i.e. the mass-numbers, energy-levels, configura-

33 Cf 5(a)

34. Cf 5(b).

35. The origin of the vector (*vargana*) could be traced back to the *Satkhandagama* They are detailed as follows ·

jam tam bandhāṇijjamnāma tassemamaṇugamaṇam kassāmo
vedanā appā poggalā poggalā khandhasamuddiṭṭhā khandhā
vaggana samudditthā 68.

The following eight types of *anuyogadvaras* are to be known for investigation of them

vagganā vagganadavvasamudāhāro anantarovanidhā paramparo
vanidhā avahāro javamajjhaṃ pademimānsā appābahaue tti 69.

The topic on the *vargana* is discussed through sixteen sections :

vaggananikkheve vagganaṇayavibhāsanadāe vaggana parūvanā
vagganānirūvanā vagganadhuvādhuvānugamo vagganasāntaranirantarānugamo vagganaojajummānugamo vagganakhettanugamo
vagganaphosanānugamo vagganakābānugamo vaggenaantārnugamo
vagganabhāvānūgamo vagganauvanayanānugamo vagganaparimānānugamo vagganabhāgābhāgānugamo vagganaappābahue tti 70.
Cf. 3(a), book 14, pp. 48-51.

For details of the internal vectors vid. pp. 48-223. For the details of external vectors constituting the bodies of bios, cf. pp. 223-469

36. Cf. 2(b). From this topic starts the description analogous to that of general system theory. Cf. L Bertalanffy, 'Progress in General System Theory', *Proc. of XIII Int. Cong of Hist.* of Sc , Moscow, 1974, sec. 1A, pp. 18-22 Cf. also pp. 31-33 66-72, 100-06.

tions and life-times. First the tables for measure space for matter suitable for the bond, rise, maximal decay and state are given. This is then divided due to the revolutionary state of the fourth control station (vv. 4-27). The minimal and maximal life-time is then depicted for various configurations, for various sensed bios, alongwith time-lags (*ābādhā-kāla*) for them (vv. 127-159). These tables are important in so far as they depict the state, and its equation of motion The geometric form of various trails (*āvalis*), the invariant (*acala*) the rising (*udaya*), etc. are given (vv. 160-161). Then appear the tables for energy-levels for various configurations (vv. 163-178). The field measrue for a single and all remaining bios appears in tables (v. 185). The instant-effective-bond is then divided for different configurations in detailed tables (vv. 192-215).[37]

The continuation of the *pariṇāma yogas* for various minimal and maximal periods and for various bios are illustrated through tables which are separate for the *ekāntavṛddhi* and *upapāda yogas*. The energy-levels of the yogas in terms of indivisible-corresponding-sections (*avibhāgi-praticcedas*), basic vectors (*vargas*), vectors (*vargaṇās*), super-vectors (*spardhakas*) and geometric regressions at various stations are tabulated with corresponding flow of karmic matter into the bodies of a bios due to the *yogas* (vv 218-232)

Then are the tables for the life-time and energy-levels of impartation along with those for the advenience (*adhyavasāya*) stations corresponding to various configurations The tables for inputs, outputs, and states at various control stations are then detailed (vv. 408-435).[38] The chapter on ten operators in the state of bond appear in tables (vv. 436-438). The tables for strength of affections (*kaṣāyas*), responsible for various energy-levels appear Then there are the combinatorial tables of the input operators, etc , corresponding to different control stations (vv. 441-450). The tables for structures of life-times are detailed in measures of nisusus for various geometric regressions (vv. 914-944). The tables for advenience for life-time are given for attachment (*moha*) and longevity (*āyu*) *karmas* (vv. 945-963). The verses from 451 to 815 describe the bond, rise and state situations at various stations. They describe the

37. Cf. *Ibid* J V Cornacchio, *Topological Structure in Mathematical Models of General Systems*, pp. 40-47 Cf. also pp 50-52, 92-100 Cf. 6(a) and 5(a) for details.

38. Cf. Kalman, R. E. etc , *Topecs in Mathematical System Theory*, New York, 1969 For a comparative study the following articles on the history of control theory are available A T. Fuller, 'The Early Development of Control Theory', *Journal of Dynamical System, Measurement Control*, vol. 98, June and September 1976, pp. 109-18 and 224-35. For historical comments on the controllability cf. R. E Kalman, *Lectures on Controllability and Observability*, Luglio, 1968, pp. 133-41

inputs, non-rise, termination of bonds etc., and the phases. The verses from 897 to 913 detail the tables for the three vital operators already noted.

Labdhisāra :[39] The various types of mapped tables are predominant here. This commentary begins with numerical symbolism of the combinatorial situations of rise of configurations at the fourth control station, decisive for a controllabillity phenomenon leading to original realization. The tables appear for the three operational phases of a bios (vv. 37-55). Then geometric and algebraic tables follow for measures of uptraction (*utkarṣaṇa*) and downtraction (*apakarṣaṇa*) of karmic matter in various trails and positions of the state triangular matrix, for the first two operators. Similarly the tables for the corresponding energy-levels follow (vv. 56-90). Then the symbolic tables for geometric transition (*guṇa saṁkramaṇa*) follow, alongwith the comparability of impartation (*anubhāga*) energy-levels in sections (vv. 91-96). Similar are the tables for the subsidence periods.

In the chapter on annihilation-sameliness, tables are regarding the premature rise and transition fluent for downtraction with various other operations corresponding to the sameliness-attachment (*samyaktva-moha*), depicted through nisusus and frustules (*phalis*). Here ends the last instant of the invariant operator (vv. 121-146). These mappings represent the hidden techniques of the system-theoretic approach. Then follow the comparability of the measures of the periods of various operators engaged above (vv. 152-163).

In the chapter on disposition-reachability (*cāritra-labdhi*) the tables describe the operational details in the mappings of the matter at different portions of the state matrix (vv. 173-176). Then follow the tables for the comparability of various operational periods of operators (vv. 178-183). The tables for comparability of purity of phases at partial restraints are mapped (vv. 184-188), and then those for reduction of impartation through energy-levels follow (v. 226).

The subsidence of the fluent of the sex-feeling at the inter-operation (*antara-karaṇa*) etc., are tabled in vv. 252-266. The tables for comparability of various sensation periods follow in v. 282, and the consequent changes in the state tables of impartation in fine tracts (*sūkṣma kṛṣtis*)

39. Cf. 2(a) and (b). Cf. A. Rapoport, 'Uses of Mathematical Isomorphisms in General System Theory', pp. 123-30, sec. IA, *Proc. of XIII Int. Cong. of Hist. of Sc.* op. cit.

are shown in geometric figures and algebraic symbolism (vv. 283-302). In the operations of subsidence of affections are the maps corresponding to various phases at control stations (vv. 305-391).

4. System-Theoretic Method of the Samyak Jñānacandrikā

It was due to the credit, par excellence, of Todaramala of Jaipur that he diverted the studies of the karmic system-analysis into two streams.[40] One was in to the mathematical part, compiled as two *Arthasamdṛṣti* chapters of the *Gommatasāra* and the *Labdhisāra*. This was meant for mathematicians. The other was in sentential details without any symbolism, whatsoever This was meant for the readers who would not be interested in the symbolic approach of the texts and its mathematical implications. However, it appears that even this attempt by Todaramala, could not get a following in the mathematical endeavour, even after two hundred years of the presence of his mathematical material as guiding chapters on symbolic measures Actually these works needed a simultaneous pursuits of the mathematical handling as well as philosophical technology of a system-theoretic technique. This was a complex task which required an inter-disciplinary study as well as the tools of analysis which have been developed within a few decades. A part of these developments is the mathematical system theory.

There are three distinct advantages of the Todaramala's contributions[41] though they definitely require a modern mathematical frame now. The first advantage is the language, Dhundhari, easily accessible to the Hindi knowing world The second is the production of tables of measures, etc., in distinct forms, topicwise, elaborating the new terms appearing at each step in the following tables as maps and so on. The third is the separation of the complete mathematical material in symbolic form which could be used for comparing operations, operators and transformed spaces and measures tabulated. at hand

The number of verses are not marked in the *Arthasamdṛṣti*. This is a disadvantage and the reader has to locate the verse. if he, desires a complete detail. From this point of view the Sanskrit commentaries are more useful, after he has gone through the work of Todaramala. The technical details in all the commentaries follow the same sequence as detailed in the previous pages

40 Cf Ibid Also S Nakayama, *The Decline of the Theory of the Classification of Learning*, pp. 184-88 Cf 2(b) as well.

41. Vid. Jain, L C 'Mathematical Contributions of Todaramala of Jaipur', *The Jaina Antiquary*, Vol xxx, no 1, July 1977, pp 10-22

Apart from the above, Todaramala's introduction to every chapter on the *Arthasamdṛṣṭi* as well as the texts gives a survey of the whole material to be used in the subsequent pages, the manipulation of the symbolic material and comprehensive details of the new terms in form of either definitions or in actual operation through numerical symbolism. Introduction to the *Labdhisāra* is a marvelous exposition without which the very motivation and implications of the symbolic expressions and figures could not be unearthed. There is no other exhaustive commentary on the *Kṣapaṇāsāra* except the *Samyakjñānacandrikā*.

The speciality of the *Arthasamdṛṣṭi* chapters of Todaramala is that they start with the initial notations and symbols in full details. He defines the word *Arthasamdṛṣti* as, 'The measure etc. of arbitrary fluents, fields, times and phases is called *Artha. Samdṛṣṭi* means symbolism' (p. 1). He gives details of the number and simile measures in numerical, algebraic and geometric symbols, (pp. 3-7). He then defines all types of operations fundamental in *Karma* theory (pp. 8-21). The tables for various measures of sets are detailed clearly (pp. 25-193). A few additional symbols for *Karma* theory appear (p. 195). The dynamical details of the *Karma* system through changes in the tetrad are depicted in all the three types of symbols, in the initial control station, with very few details of the next three control stations (pp. 196-307).

Todaramala is to be credited for giving ample of geometric figures with full explanations wherever he could. The figures inclined towards the vertical denote the decreasing or increasing mass-numbers. The figures inclined towards the horizontal denote the trend in the energy levels. The process of subsidence is reversible, although it attains controllability and reachability of original vision and disposition. The process of annihilation is not reversible. After attainment of contorllability, it ultimately reaches the state of original realization.

Concluding Remarks

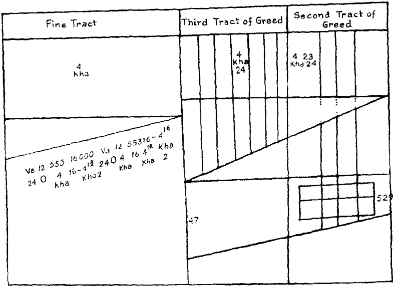
The research papers published so far, on the Jaina School of Mathematics, do not give a complete picture of system-theoretic technique, the *Karma* decisions which had motivated and originated the naive set theory of finite and transfintite measures at the period when the Greeks were just preparing for foundational studies in geometry of Statics and Kinematics of simple phenomena of the observables. The contributions of the Indians was on the non-observables through abstraction. This tradition did not lose the grip over the posteriority till 1800 A.D. and the last worker on the system theory in mathematical details appears to be Todaramala who died in 1767 A.D.

It has not been possible in this paper to give mathematical and technical details of the system-theoretic technique during 1400-1800 A.D., some of which have appeared in earlier papers. The attached appendices will give an idea of the method.

The author expresses his gratitude to Dr. K. S. Shukla for encouraging and guiding the above study.

Appendix A

Structure of Impartation : Triangular symbols are horizontal.



Below is the *sūkṣma kṛṣti* (fine tract), with a rectangle-lamina. Below is the measure of fluents of the initial and final tracts through special reducing sequence symbol.

Above this is the third tract of greed, and still above is the second tract. Here is the symbol for special dual fluent of the special lower tract earlier to rectangle. In between the tracts, there are new tracts, shown by symbolic middle lines. Straight lines are for the production of transmutation-fluent. The curved lines are for the tracts produced through bound fluent.

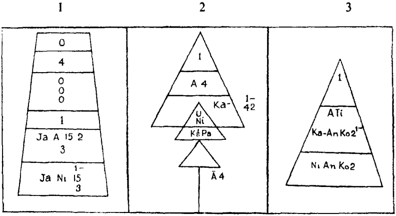
The fluent is shown from the first to the final tract.

The *viśeṣa* (special) in relation to fine tract is multiplied by two geometric regressions to yield the first tract fluent. When the multiple is reduced one by one till the fine tract less one, then the final tract is produced.

from *Arthasaṁdṛṣṭi* of *Labdhisāra*, p. 161

Appendix B

Nisus Structure according to life-time : Triangular symbols are vertical



1 The process of downtraction of fluent : The figure shows a decreasing sequence of the nisusus relative to ultimate particles. There are three divisions : (i) minimum injection (*jaghanya nikṣepa*), (ii) minimum over-installation (*jaghanya atisthāpana*) and (iii) input nisus. Symbol of *āvali* (trail) is 16, from which 15 is obtained by subtracting 1 and when its one-third part is increased by unity it becomes (i). The two-third part is (ii). Above (i) is the input nisus. Above are the other divisions of downtraction, gaps being shown by zero.

2 The lowest portion of the maximum injected, over installation is the time-lag trail denoted by *Ā* 4, above which is the maximum injected fluent, and above it is overinstallation fluent and still above is the final nisus. There is no nisus structure in time-lag trail, hence it is denoted by a vertical line. In overinstallation, 4 is the trail, thence the life-stay of *karma* in the maximum injected is Ka, then symbol for nisus is–, and the diminished amount is two trails increased by an instant, becoming $^{1}_{42}{}^{-}$. Then the input (absorbed) nisus is written above as 1.

3 In the process of *vyāghāta* is the overinstallation, injection structure. Division between the injection and overinstallation is a horizontal line. The amount of the injected is the inter-crore-into-crore Aṅ Ko 2 ; the amount of over installation is the *karma* life-time Ka subtracted by the amount of inter-crore-into-crore increased by an instant. Above this is the absorbed input nisus denoted by 1.

Here the fluent of the input (taken) nisus is taken and given to nisusus in form of the injected. It is not to be given to the nisusus in form of overinstallation.

from *Arthasaṁdṛṣṭi* of *Labdhisāra*, p. 5

Jainism in Bengal during the Pala Period as revealed in the Buddhist Dohas

CHITTA RANJAN PAL

It is generally believed that during the reign of the Pala kings, who were devout Buddhists, the influence of Jainism in Bengal suffered a sharp decline.[1] But information gathered from some *Dohākoṣas* reveal a different picture, which bears testimony to the fact that Jainism was one of the six popular religions of Bengal even during the Pala period.

It is well-known that H. P. Sastri discovered some Bengali manuscripts of Sahaja-Yana Buddhist character in Nepal in 1907 which he edited under the title *Bauddha Gān O Dohā* in 1916. The book consists of some *Caryāpadas*, one text called *Dākārṇava* and two *Dohākoṣas*. Of the two *Dohākoṣas*, one was composed by Saroja Vajra and commented upon by Advaya Vajra. Being the author of the book, Saroja Vajra must have flourished sometime earlier than Advaya Vajra, the commentator. Regretable as it is, different scholars, inspite of their best efforts have failed to come to an unanimous decision regarding the respective dates of the two writers.[2] So it is safe to avoid controversy, to place them between the 8th and the 12th century A.D. i.e. the age of the Pala kings.

Saroja Vajra in his attempt to refute the Jaina philosophy had levelled severest attacks against the out-ward practice as well as the dogma of the Jaina mendicant. Incidentally it may be mentioned that the *Dohākoṣa*-writer and his commentator did not spare even the adherents of other popular sects of the then Bengal.[3] But the harshest language was employed by them against the *Kṣapanakas* or the Jaina monks.

The Jaina practice of keeping long nails, shaving of head, going naked was stigmatised by Saroja Vajra and his commentator Advaya Vajra.

[1] R. C. Mazumdar, *History of Ancient Bengal*, p. 521.
[2] *Ibid.*, pp. 389-90, footnote, p. 410.
[3] H. P. Sastri, *Bauddha Gan O Doha.*, p. 6ff.

Spoke Saroja Vajra in his *Dohākoṣa*:

jai ṇagga via hoi mutti ta suṇaha śiālaha[4]

If nudity brings salvation, then jackals and dogs would be the first to obtain it.

lomoppāttane achcha sidhaih ta juvai nitaṁvaha[5]

If liberation is attained by tearing off the hairs, the hips of young ladies should attain it.

pichhigahaṇe dittha mokkha tā kariha turaṅgaha iti[6]

If liberation can be attained by merely putting on peacock-feathers, then elephants and horses would attain it, because they are on occasions adorned with peacock feathers.

ubbheṁ bhoaṇeṁ hoi jāṇa tā kariha turaṅgaha[7]

If the eating of grass ensure liberation, why should not elephants and horses be liberated?

Saroja Vajra did not stop here. He went further and frowned upon the ideal of *mokṣa* as preached by the *Kṣapaṇakas* or the Jaina monks. Regarding the *mokṣa* of the Jainas he wrote: "They preach that eternal is the *mokṣa* which stands on the top of the universe in the form of an umbrella spreading over 86 (Thousand) *yojanas*. But the universe itself is liable to decay and extinction. So where would the umbrella stand, when the universe would be no more. I do not realise what the *Kṣapaṇakas* mean by *mokṣa*.[8]

Such criticisms as were hurled against the Jainas prove the vitality and popularity of the latter in Bengal during the Pala period. The criticism of the rivals is to be regarded as an index of the popularity of them against whom those criticisms were made. Had there not been very many *Kṣapaṇakas* or Jaina mendicants in Bengal, the author of the *Dohākoṣa* would not have flung such volleys of stigma and sarcasm against the Jainas.

[4–7] H. P. Sastri, *Bauddha Gan O Doha*, p. 87.
[8] S. B. Dasgupta, *Obscure Religious Cults*, p. 56.

That Jainism as a system of philosophy still stood on a high pedestal with a large mass following has been indirectly confirmed by the author and his commentator themselves.

At the outset of his *Dohākoṣa*, the author Saroja Vajra proposed that he was going to refute the six systems of philosophy (*Saḍdarśana*) because those who follow them, do not know their meaning.

saḍdarśanesu jattattvam na jānanti tadāśritah[9]

The word *Saddarśana* generally signifies the traditional six systems of Hindu philosophy like Samkhya, Patanjala, Purva-mimansa, Uttara-mimansa, Nyaya and Vaisesika. But here the commentator Advaya Vajra has cautioned the reader that by six systems the author meant the religious sects of Brahma, Isvara, Arhanta, Bauddha, Lokayata and Samkhya.[10] Arhanta here undoubtedly stands for the sects of the *Kṣapaṇakas* or the Jainas.

There is no denying the fact that these six religious systems including that of the Jainas, had immense popularity during the Pala period and it is for this reason the author attempted to refute them. So it may be surmised that Jainism or the religion of the *Kṣapaṇakas* did not lose any vitality during the Pala period, though it failed to enlist royal support for its cause. On the contrary during the Pala period Jainism was counted upon as one of the six popular religious sects of Bengal even by their opponents.

[9] H. P. Sastri, *Bauddha Gan O Doha*, p. 7.

[10] *Ibid.*, p. 81.

[11] *Ibid.*

NANDISEN

—a short story—

GANESH LALWANI

After taking permission of his father Prince Nandisen came out of the palace to take initiation at the hands of Bhagavan Mahavira. The first light of dawn was just breaking. The sky was tinged with red by the kisses of red-lipped brides of the Eastern Region. In the first refreshing hour of the dawn Nandisen was proceeding on the road with his heart full of joy

Coming out of the stone and iron rampart of the palace, crossing over the green strip of the woodland he stopped near a stream That was the way to Gunasila Caitya

Just as he wanted to put his leg in the stream to cross it over he heard some one's footsteps behind and looked back, but he saw no one by streching his eyes as far as they could go. He thought in his mind : How strange ! He had heard the steps clearly

Again he lifted his leg to move forward, he heard no more steps but someone's voice That voice was speaking to him from very near : 'Nandisen, where are you going ? Unsatiated are your desires. You should take initiation after satiating them, my boy.'

Standing on the bank of that stream Nandisen began to look in all directions, but, far or near, infront or behind, above or below he found no one. Then, what he had heard was not true? But he had heard it very clearly.

Again Nandisen lifted his leg to go forward. Again he heard that voice · 'Oh Wise, a thing done before its time never succeeds.'

Nandisen turned back to see. But there was no one anywhere. But he could not but reply this time. He said: 'Oh Spirit, who ye are I do not know. I thank you for your advice, but I do not find any desire anywhere in my mind. So I think myself fit for initiation.'

Again he heard that voice : 'No, Nandisen, you have not yet seen that desire which lies in the innermost region of your heart. But I am seeing it vividly, nakedly. You have a desire for woman, you have to get her yet as a mistress. So I am asking you to desist from taking initiation just now.

Wonderstruck was Nandisen. But he could not find any desire for a woman even after a careful examination of the depths of his own heart. His heart is hard and unbreakable like that stone slab lying in front of him in the water over which the water could flow murmuring gently but could not melt it or break it.

So ignoring that advice Nandisen came and stood at the gates of Gunasila Caitya

Nandisen took initiation at the hands of Mahavira.

Even Mahavira had asked him not to take initiation at that time but seeing his eagerness he initiated him at last.

Nandisen also told him of the footsteps and the voice, but Mahavira gave no reply. A gentle smile like the rays of the moon spread on his lips and his face glowed in its light.

... But as the days passed Nandisen became more and more eager for a reply because those footsteps, that voice were still haunting him. As he would try to concentrate on the scriptures under the shade of a Asoka tree he would hear light footfalls. He would see a swanlike movement, beautiful and fragile just vanishing in the shades of the wood after waving the little shafts of grass with joy. When he would try to stand erect in kayotsarga posture for meditation he would hear some voice as sweet as music. Then someone would say: 'Nandisen, this life of your penance and hardship is useless.'

Nandisen also was now asking himself: Was it really useless?

Nandisen now tried to make his life still harder. Fixed for himself more rules of conduct as if by erecting the ramparts of hardship he will protect his self.

But that voice would laugh and then say: 'Wait Nandisen, she who will lie in your lap is within your self?'

Within my self ? Nandisen began to be shaky. How that was possible ?

. But what he was seeing ? He was seeing the graceful body, the beauty of a young lady. Her loosen bodice, untidy hair and her clothes ruffled by the wind She was standing below the bluish shade of the Asoka tree as refreshing as the first approach of shower. That graceful golden hue of her body he knew not why ran in his veins with intense heat.

Nandisen took resolution that he would win over this hunger by fasting and more fasting

For continued fasting his body became slim but the glow of his golden complexion grew hundred times more like that of burnt gold.

After a long fast Nandisen went out for begging alms. But he knew not where he had come. Someone had brought him before the doorsteps of a beautiful house, white as a conch-shell, surrounded by groves of flowers guiding him all the way. He stopped in front of the door. It appeared to him that a light footstep, gentle and delicate moved inside crossing that door. He was astonished And this astonishment of Nandisen grew still more when he saw an illusive woman standing before him with all the sweetness of music and absorbing all the sweet smell of the world. Her high breasts were sensitively adorned with a necklace, her cheeks were painted with sandal, her laughter likened the shafts of moon-beam and her lips were red as coral washed by the sea. Nandisen looked at her without a wink and began to think whether it was she who was in his heart? Was it she who will lie in his laps?

He felt more the hunger of the body than any hunger for food.

Illusive gladness of pleasure began to flash in the eyes of that bewitching woman. She was asking herself : Who is this lost young monk whose physical beauty is like that of a prince, whose youthfulness is like a pleasant garden though surrounded by the hardness of a recluse. Her eyes widened still more and her breathing became still more rapid.

It was that woman who first asked Nandisen: 'What ye want, oh Wise?'

The music of her voice was much sweeter than the sweetest flute. On hearing that voice the hairs of his body stood in joy. Then to say something he raised his head but he could not say anything. He said only: 'Alms.'

Now she looked at him in wonder. Alms! No, its, not the face of a begger asking for alms but the face of a lover immensely in love. Like a flash of lightning a smile spread on her tinted lips. She said: 'I am Ruchira, the courtesan. What can I give you than my beauty and my youth?'

Nandisen was astonished at his own voice. Some one said from within him: 'I am thankful to you for this my Beauty! Ye are the first wonder of my life, dream of my youth, sweet fragrance of my dream. Without you, all my meditation, my endeavour are useless.'

Ruchira burst into a loud laughter. Then streching her arms she moved forward and in a moment she was lost in the close embrace of a young lover.

Six long years rolled away like six moments. But Nandisen knew nothing of it. He knew not when the sun rose and when it set. And when the moon spread the magic of its beams. Everything of his was lost in a void, as if there was nothing in the universe except he and his Ruchira.

But a day came when the infatuation had its end. And one fine morning gladdened by the chirping of the birds he came out on the open by tearing himself away from the embrace of Ruchira. The first glowing red of the morning was just then bursting in its glory.

Astonished Ruchira followed him and then obstructing his path stood before him and said: 'Where are ye going, my Love?'

Nandisen was looking at her face. Was she the woman of wild beauty of his dream, on seeing whom he lost control of his self? Today his look went deeper and deeper much beyond the beauty of form. And his eyes were moist. At last looking at her face he said: 'Forgive me, Ruchira.'

Forgive! And she breathed heavily from her heart.

Then said Nandisen slowly: 'Today in my dreams during the break of dawn I have seen the compassionate eyes of Mahavira. They are calling me.'

Her creeperlike body with the lilting grace began to tremble in the apprehension of painful separation. Instantly she fell on the wide bosom of Nandisen and pressed him to her breast. In a tight embrace she was saying: 'Speak Nandisen, speak, you won't leave me alone.'

But Nandisen gave no reply.

She still pressed him tighter to her breasts and was saying: 'Speak Nandisen, speak. Why your lips are afraid? Why your breathing is faltering?'

Ruchira was now hearing the death-knell of her love. She understood. She could no more retain Nandisen. So she loosened her grips and freed him from her embrace. Tears rolled down the cheeks of Ruchira, the graceful courtesan. It is the end of desire and not of love. That love, that union was true and eternal.

Once again Nandisen stood in front of that stream. It was flowing with gentle murmur as before That stone slab was lying there under the water in the same position.

Nandisen looked at that slab and then asked himself: Is his heart as hard and unbreakable as that stone?

He felt a pain in his heart which was moist with kindness and sublime in love.

Nandisen came and waited at the gate of Gunasila Caitya. He will enter only if the Master calls him in. Otherwise, he will give up his body by sallekhana.

But he had not to wait for long. He heard the voice of the Master. You are truthful to your self. Pure and sinfree as fire.

Tears rolled down the cheeks of Nandisen.

A Unique Door-Lintel from Khajuraho

MARUTI NANDAN PRASAD TIWARI

Khajuraho, in Chhatarpur District of Madhya Pradesh, has yielded profuse Jaina vestiges of iconographic and art-historical importance, spread over the tenth to the twelfth century A.D. The Jaina antiques of Khajuraho are the creation exclusively of the Digambara sect. In the present paper we propose to make a note on the figures carved on an unpublished door-lintel from Khajuraho, now on display at the open-air Archaeological Museum, previously known as the Jardin Museum, at Khajuraho (Acc. No. 1467). The door-lintel probably belongs to the eleventh century A.D. It is a singular door-lintel from Khajuraho in the sense that it incarnates in inanimate stone the three most popular Jaina Yaksis, namely, Cakresvari, Ambika and Padmavati together.[1] Perhaps it is relevant to mention here that the *Rūpamaṇdana* invokes Cakresvari, Ambika, Padmavati and Siddhayika, respectively the Yaksis of Rsabhanatha, Neminatha, Parsvanatha and Mahavira, as the four popular-most Yaksis of Jaina pantheon.[2]

The beautifully designed long rectangular slab with the main figures of the Yaksis being inset in high relief contains the figures of the *navagrahas* also, carved in a row from left to right. The left and right extremities of the slab (from the onlookers viewpoint) are occupied by the figures respectively of Ambika and Padmavati, while in the centre is carved Cakresvari. These Yaksi figures possessing four arms are seated in *lalitāsana* with right leg dangling down and the left one being folded. Each of the Yaksis is bedecked in *dhoti*, necklaces, *stanahāra*, armlets, braceletes, anklets and girdle. Cakresvari wears a *kirita-mukuta*, while Padmavati and Ambika wear respectively a *karaṇda-mukuta* and an embellished coiffure.

Cakresvari or Apraticakra (as some sources call her), the Yaksi of the first Jina Rsabhanatha, rides a *garuda* (represented in human form and supporting the seat of the Yaksi) and bears in her surviving hands the

[1] All other door-lintels of the Jaina temples at Khajuraho contain in general the figures of Cakresvari, Ambika, Laksmi, Sarasvati, and in one instance Siddhayika, the Yaksi of Mahavira, also.

[2] *Rupamandana*, 6.25-26.

varada-mudrā, a mace and a disc.[3] The rendering of the Yaksi corresponds to a great extent with the prescriptions of the Digambara iconographic texts which conceive the four-armed Cakresvari as riding over a *garuḍa* and bearing a disc and the *varada-mudrā* as the chief attributes.[4]

Ambika, the Yaksi of the 22nd Jina Neminatha, holds an *āmralumbi*, a spiral lotus, a spiral lotus in her three hands, while with the remaining one she supports a child sitting in her lap and touching her bosom. Beneath the seat is carved a lion, her mount, and by her right leg is sitting her second son with a citron in his hand. Over the head of Ambika there appears a diminutive figure of her Jina and also the branches of a mango-tree. The present figure of Ambika is chiselled fully in conformity with the injunctions of the iconographic texts of the Digambara sect so far as the rendering of lion as mount and an *āmralumbi* and a child as her distinguishing attributes are concerned.[5] The only departure from the tradition in her representation is noticed as to the number of hands of Ambika, who has invariably been visualized in the Digambara canons as possessing two hands. The two additional hands bearing spiral lotuses in the present instance perhaps speak of some unknown tradition. It would be relevant here to note in passing that Cakresvari and Ambika enjoyed the foremost prominence among all the Yaksis at Khajuraho.

Padmavati, the Yaksi of the 23rd Jina Parsvanatha, is shaded by the five-headed snake canopy. She shows the *varada-mudrā*, a noose, and a goad in her three hands, while the fourth one is mutilated. Close to her seat is carved her conveyance what appears to be a *kukkuta*. The rendering of Padmavati figure conforms to the iconographic prescriptions of the Digambara works which enunciate *kukkuta* as her mount and a goad and a noose as her chief emblems.[6] The canopy of cobra hoods is also envisaged for her.

The worship of the *navagrahas* in Jaina tradition was assimilated in the remote past. They constitute an important class of gods grouped as Jyotiska Devas. Their iconographic features are detailed in Jaina texts of the eleventh-twelfth centuries A.D. The separate figures of the *navagrahas* are not known. Nevertheless, they are represented in group on the

[3] The attributes of the Yaksis are reckoned clockwise starting from the lower right hand.

[4] *Pratisthasarasamgraha*, 5.15-16, *Pratisthasaroddhara*, 3.156.

[5] *Pratisthasaroddhara*, 3.176, *Pratisthatilakam*, 7.22, p. 347.

[6] *pasankusau padmavare raktavarna caturbhuja*
padmasana kukkutastha khyata padmavatiti ca
Aparajitaprccha, 221.37; also see *Pratisthasaroddhara*, 3.174.

door-lintels of the Jaina temples and also on the *parikara* and the *sinhāsana* of the Jina images during c. eighth-twelfth centuries A.D. Their rendering was more popular with the Digambaras, specially at the Jaina sites of Mathura, Deogarh and Khajuraho. However, the representation of the *navagrahas* at Svetambara Jaina sites is rarely met with. It is worthwhile to note here that the iconographic features of the *navagrahas* at the Jaina sites lack in variety and follow the features of the Brahmanic representations.

All the *grahas* of our door-lintel possess two hands and wear decorated *mukutas*, necklaces and other usual ornaments. Surya, the sun god, sit in *utkūtikāsana* (squatting pose) and holds long-stalked lotus in each of his hands. In front of him is carved a small standing female figure who may be identified with Usa. The subsequent six figures following Surya, sit in *lalitāsana* and show the *abhaya-mudrā* and a *kalaśa* in their right and left hands respectively. They represent Candra, Mangala, Budha, Brhaspati, Sukra and Sani *grahas*. Rahu, whose bust is only shown, occupies the extreme end of the slab. His hands are shown in the *tarpaṇa-mudrā*. Over the head of Rahu, there appears Ketu, a snake deity, in hovering pose with his hands folded. He is shaded by cobrahoods and his body below the waist is that of a serpent.

Evolution of Jaina Sangha

J. C. SIKDAR

[from the previous issue]

Factors Regulating the Distribution of Jaina Sanghas, Ganas, Gacchas, etc.

Whenevei a close study of some particular Jaina Sangha is made, one is struck by the remarkable fitness of the monastic order for the place in which it moves and lives. This fitness of monastic organization, its structure and function, even behaviour pattern of it, has arisen in the course of evolution of Jaina Sangha for survival. The outcome of its evolution is a population of monastic order, a Sangha, adapted to survive in a certain type of social environment. Jaina Sangha or Gana or Gaccha shows adaptations both to the socio-economic and political environment, physical environment, nature and to the monastic and religious environment, which includes all the Jaina Sanghas, Ganas, Gacchas, etc. and other religious sects living in the same region. It is why Jaina Sangha or a branch of Jaina Sangha is not found everywhere in India Some parts of India are too hot, too cold, too wet, too dry or too dusty or something else for the Jaina monastic organizations to survive there.[61] The climatic environment may not kill the Jaina monks directly, as they can bear the *pariṣahas* (forbearance) but effectively keeps Jaina Sangha or Gana or Gaccha, etc. from becoming established there It prevents its propagation of *dharma* and observance of religious vows of *ahimsā*, etc. in the Jaina monastic life cycle.

So, most Jaina monastic orders are not found in all the regions of India, even in such places where they could survive. The existence of natural barriers or social environments[62] prevents their further dispersal and enables one to distinguish the major mission realms characterized by certain assemblages of Jaina Sanghas, Ganas or Gacchas etc.

[61] e.g., Kashmir is too cold, Assam and East Bengal (Bangladesh) are too wet. They are not the proper places for the growth, development and survival of Jaina Sangha, as the *ahimsa vratin* Jaina monks cannot live there for the clemecy of weather with full observance of non-violence in their daily ascetic life

[62] e.g., the nets of rivers and the social environment of fish and meat eating population of Bangladesh prevented the spread of Jainadharma and Sangha there although North Bengal and West Bengal have no such natural barriers and social environments. It is there once only Jainism flourished in the early period as is evidenced by the *Kalpasutra Sthaviravali* and some archaeological deposits.

Each Jaina Sangha requires certain materials for growth and development and its progress can be restricted, if the environment, climatic, social, economic, political and religious, does not provide certain minimal amount of each of these materials. Too much of a certain factor would act as a limiting factor just as well as too little of it and that the distribution of each Jaina Sangha is determined by its range of tolerance to variations in each of the environmental factors.

Some Jaina monastic organizations have very narrow ranges of tolerance[63] (*pariṣaha*) to environmental factors, while others can survive with vision of much broader limits.[64] A given monastic organisation may have narrow limits of toletance for one factor and wide limits for another.

Temperature is an important factor for Jaina Sangha as the relative sparseness of life in the desert of Rajasthan and the cold climate of Kashmir demonastrates.

Most of the Jaina Sanghas, Ganas or Gacchas, etc. that do live in Rajasthan have adapted to the rigours of the environment by living in *Upāśraya* or any other suitable shelter during day and coming out only to take alms at proper time from the houses of the Sravakas. Many Jaina Sanghas escape a bitter cold of Northern winter not by moving or migrating to South but by putting on some clothes to keep them warm.

It seems that Jaina Sanghas, Ganas, Gacchas, etc. had to evolve some ways, for the protection against too little light or darkness to avoid the killing of small beings, so they take their meals before the sunset. Water is a physiological necessity for all living beings but is a limiting factor primarily for land organisms. The amount of rain fall, its seasonal distribution, the humidity and the ground supply of water are some of the limiting factors in the distribution of Jaina Sanghas, Ganas, Gacchas, etc., for instance, it is a limiting factor for Jaina Sangha in West Bengal, East Bengal and Assam because of too much of the rainfall there.

Although the Marudesa-Sanghas of Rajasthan can escape the high temperature and low humidity by retreating to the *Upāśrayas*, the Marudesa-Sravakas must stay on the surface of their regions and have had to evolve some agro-economic and mechanical structures to prevent water loss and to resist high temperature. Knowledge of the limits of water tolerance can be used by the Jaina monks to regulate their monastic life.

[63] The Jaina Sanghas or Ganas or Gachcas, e.g. 84 Gacchas and others, died out because of narrow range of tolerance and other factors.

[64] e.g., Tapagaccha is still flourshing with vision of much broader limits and other factors.

The atmospheric conditions are usually not limiting factors for Jaina monastic orders except for the monks moving to the acquatic environments of East Bengal and Assam.

Defficiences of requisites of monks produce severe deficiency—disease in them. Certain regions of India are unsuitable for raising the corps of monks because of the factors of too much cold weather, too much rain fall and water currents, limiting the growth and development of Jaina Sanghas there, e.g Kashmir, Assam and East Bengal. There are marked differences in the rank and file of the Jaina monks of a still and peaceful atmosphere[65] and swiftly flowing atmosphere[66] of the society. So the type of personalities of Jaina monks of different climatic, regional, social atmospheres is also a limiting factor for the growth and development of many Jaina Sanghas there

Fire also may be a factor of monastic ecologic importance for the distribution of Jaina Sanghas, for the Jaina monks use only the water, strained, boiled and cooled down by the laities in their daily ascetic life. If fire is not available, it is not possible for the Jaina laities to boil and cool down water for offering it to their monks when they come for it.

The physical limiting factors described above are important in determining whether or not a given Jaina Sangha or Gana or Gaccha can become established in a given region. Each region is inhabited by a host of people and animals and plants There are many inter-relationships among them. A Jaina Sangha living in any given area as ascetic community may be composed of smaller groups, the members of which are more intimately associated. There is no sharp distinction between the population and a Jainasadhusamudaya (community of Jaina monks). The need of living beings whether monks, householders, animals or plants is food and energy. A closer inspection reveals that all organisms down to the monks have the same basic needs for survival, the same problems of getting food for energy, getting space to live, producing a new generation, and so on. In solving these problems, the plants and animals, householders and monks have evolved into a tremendous number of different forms, each adapted to live in some particular sort of environment. So food and shelter[67] are essential requisites for the physical existence of Jaina monks. If *subhikṣā* is not available to a Jaina Sangha in a region, it will have to move to a suitable place, for no Jaina Sangha can survive without food and shelter. *[to be continued*

[65] e.g., Gujarat.

[66] e g, Bombay and Calcutta.

[67] *Subhiksa (navakotisuddhahara)* and *Upasrayas* or any vaccant house are necessary for the Jaina monks.

BOOK REVIEW

MORE DOCUMENTS OF JAINA PAINTINGS AND GUJARATI PAINTINGS OF SIXTEENTH AND LATER CENTURIES
by DR. UMAKANT P. SHAH, L. D. Institute of Indology, Ahmedabad 1976, Pages 28,Price Rupees 76.00. With Plates.

In the general perspective of Indian art along its flowering glade of expressions by lines and pigments one has no doubt to pause before the discipline and linear appeal of Jaina and Gujarati paintings of bygone era. Actually, to understand the expressions and style of Indian paintings of the past centuries the impact of such creations still remains to be further evaluated right from the context. A savant on Jaina history and culture Dr. Umakant P. Shah has made another contribution to his field of research by working on an invaluable reportery of Jaina paintings and their comparable illuminations from Gujarat. The writer has conveyed us the imperishable glory of Western Indian art as also the taste and vision of artists who have devised the formality of depicting profiles characterised by the extended further eye and the familiar pointed nose. Dr. Shah has traced such style though still seemingly insipient as an established discipline in a copper plate of Paramara Vakpatiraja dated 974 A.D., in one of the Banswara copper plates of Bhojadeva dated 1019-1020 A.D. and in a charter of Paramara Siyaka dated 969 A.D. Besides these, a number of wooden book covers (*Paṭṭikas*) embellished with paintings from Jesalmer and similar workmanship and artistry as noticed in the collection of Muni Punyavijayji will also appear extremely interesting. According to Dr. Shah :

"From a study of all these paintings, it is now safer to conclude that a few examples of the tenth and eleventh century paintings in Western

India are now available and have their affinities with contemporary relief carvings in stone obtained int he Gurjara-Pratihara art in Western India." (p. 3).

In this connection it may be apt to recall that, the Eastern Indian paintings of Bengal and Orissa in mediaeval epochs like comparable instances elsewhere have also their expected relationship with sculptural forms The Sundarban copper plate grant of Sri Madommanapala dated 1196 A.D. is as important as the charter of Paramara Siyaka. Depicting enthroned Visnu manifesting before Garuda kneeling in devotion in etched lines moving in fluid curves the copper plate has captured an established formality of antiquity.

In this book the author has enumerated a number of ancient texts and has dealt with the virtuosity of the Western Indian artists and the volume of contents of relevant paintings in the perspective of time and space. The importance of such a Prakrit work as *Kuvalayamālā-Kahā* and that of *Samsāra-Cakra-Pata* of Bhanu, "prince of king Simha of the ancient city of Dvarika situated in the Lata-desa" can seldom be over-emphasised. The learned writer has tried his best to acquaint us with such terms as *gulikā*, a kind of superfine brush, *alekhana* or *lekhana* i.e the act of painting, *rekhānyāsa* i.e. drawing of outlines, *vratanā* i.e. shading and modelling, *praticchandaka* (*padicchandaya*) i.e. portraits etc. In fact, he has highlighted some rare accounts in respect of paintings of Jaina affiliation. Thus, he writes,

"I am not repeating here the evidence from *Tilakamañjari*, *Udaya-sundarī-Kahā* etc. already discussed by Sivarammurti. But I should like to quote here an interesting reference to a *Citraśālā* (Hall of Paintings) attached to the Jaina shrine called Kumaravihara (now not extant) at Patan built by Kumarapala, some time in the third quarter of the twelth century. Ramacandra Suri, the famous author of *Nātyadarpaṇa* and several plays, etc. who was a contemporary of Kumarapala, gives a poetic description of this *Citraśālā* which had paintings of *vyālas*, elephants, monkeys, camels, chariots, lives of divinities, scenes of several *nātyas*, and of the battles between gods and demons." (p. 7).

The present publication contains invaluable accounts and useful references which are as important in the field of research as in connection with the appraisal of the mood and idiom of Jaina paintings and manifestation of Gujarati illuminations in their traditional ateliers. According to Dr. Shah, "the elimination of the further eye and the omission of three-quarters profiles, representing human figures in full profiles seem to have

started much earlier than C. 1500 A.D." (p. 23) This he has tried to demonstrate by recalling the figuress of Garuda incised on the Mandhata Plates of Paramara Jayasimha-Jayavarman, dated 1274 A.D. and in the plates of Maharajkumara Udayavarma Deva, dated 1200 A.D. Though it is difficult to doubt the validity of the argument the survey made by the scholar will increase our curiosity with regards to the cultural environments which effected such elimination of a style. As already observed by W. Norman Brown, the *Kālakācāryakathā* paintings depict the foreign Sahis paying full emphasis upon their Mongolian features unlike the traditional representation of Indians which remain in contrast with them in the same paintings. Thus, he remarks, "The face of the Sahis is never shown in the slightly less than full profile pose with the protruding eye that is the invariable pose for the faces of Indians. Instead it is shown in some thing less than full front face and the eyes are always contained within the facial contour." (*Jain Journal*, April, 1970, p. 212). The co-existence of two different ideals has also been explained by Norman Brown. "Possibly in these miniatures of the *Kālakācāryakathā* we should be justified in seeing the first small intrusion into Indian painting of Persian elements. As time went on the Persian encroached increasingly upon the native Indian style, until the combination of the two brought into existence the Rajput and Mughal Schools. The Western Indian style was ultimately extinguished." (*Ibid.*)

Among paintings of later times reproduced in the publication a special mention may be made of illustrated folios of *Bālagopāla-Stuti*, as also pages from the *Bhāgavata Dāśamaskandha* and the *Rati-Rahasya*. The present book with its fairly large number of fascinating illustrations will again bear witness to the dedication of a scholar who has studied Jaina art and culture beyond measure.

—P. C. Das Gupta

Jaina Bibliography

Amulya Charan Ghosh Vidyabhusan

[The following bibliography has been compiled by late Amulya Charan Ghosh Vidyabhusan in the year 1910 and published in *Bāṇī*, Baisakh-Asadh number, 1317 B.S. For the benefit of our readers we are reprinting it. It has been arranged alphabetically.—Editor]

I

Adhar Pāpasthānakni Sajā, Ahmedabad, 1867.
Amich and Kesavji and Bhagawandas Kevaldas, *Jain Vrat Sikṣāpairī*, Surat, 1870.
Arihant Stuti Samgraha, Bombay, 1872.
Atmaramji Anandvijayji, *Jain Tattvādarś*, Ahmedabad, 1899 ; Bhavangar, 1899.
Bārah Vratni Tīp, Bombay 1872.
Ganhulī Samgrah, Bombay 1873.
Hemcandra, *Srī Trisastisalākāpuruṣacaritra*, Bombay, 1905-06.
Hukam, *Hukam Vilās*, Ahmedabad, 1870.
Jain Laghu Sār Samgraha, Bombay 1871.
Kalidas, *Meghadūt*, Benares, 1867.
Keval Amichand, *Nemi Vivāha*, Ahmedabad, 1873.
Manorañjak Stavanāvalī, Ahmedabad, 1871.
Mohan Vijay, *Mānatunga Mānavatīno Rās*, Bombay, 1873.
Puṇya Prakāś, Ahmedabad, 1872.
Satruñjay Mahātīrth Mahātmya, Ahmedabad, 1870.
Sambegi Sadhuji Cāritrapradhān Samvak Jain Dharmbodh, Bombay, 1871.
Sīddhānt Dharm Sār, Bombay, 1872.
Sīlopadeś Granth, Ahmedabad, 1870.
Udayratn Maharaj, *Bhuvanbhānu Kevlīno Rās*, Bombay, 1871.
Umasvati, *Tattvārthādhigama (Bibliotheca Indica)*, Calcutta, 1905.

II

Allen, B. C., *Assam District Gazeteers*, Calcutta & Allahabad, 1905-06
Vol II, 1905, Sylhet, p. 90.
Vol. IV, 1905, Kamrup, pp. 102, 105.
Vol. VI, 1905, Nowgong, p. 95.
Vol. VII, 1906, Sibsagar, p. 104.
Vol. VIII, 1905 Lakhimpur, p. 135.

Archaeological Survey of India, Annual Report, 1903-04, Calcutta, 1906, pp. 78, 87 ; *Annual Report*, 1904-05, Calcutta, 1908, pp. 5-6, 26-27, 40.

Ballini, A., '*La* Upamitabhavaprapanca Katha di Siddharsi', *Giornale della Societa Asiatica Italiana*, Vol. XIX, pp. 1-50 ; Vol. XXI, pp. 1-48 ; Firenze, 1906 et 1908.

Ballini, A., 'Contributo Allo Studio della Upamitabhavaprapanca Katha di Siddharsi', *Rendiconti della Reale Accademia dei Lincei, Scienze Morale, Storiche Filogogiche*, Serie Quintia, Vol. XV, pp. 309-348 ; 397-438 ; 397-438 ; 623-659, Roma, 1906.

Ballini, A., 'Bollettino (Bibliografica) : Jainismo', *Rivista Degli Studi Orientali*, Vol. II, pp. 552-54, Roma, 1907-08.

Ballini, A., '*Il* Vasupujyacarita di' Vardhamana Suri', *Rivista Degli Studi Orientali*, Vol. I, pp. 41-46 ; 169-95, 439-52 ; Vol. II, pp. 39-84, Roma, 1907-08.

Ballini, A., '*Il* Vasupujyacarita del Trisastisalakapurusacaritra di Hemacandra', *Rivista Degli Studi Orientali*, Vol. II, pp. 239-40, Roma, 1908-09.

Banerji, R. D., 'The Scythian Period of Indian History', *Indian Antiquary*, Vol. XXXVII, pp. 25-75, Bombay, 1908. (pp. 33-34, 35-39, 49, 51-52, 63)

Buchanan, Francis, *A Journey from Madras through the Countries of Mysore, Canara, and Malabar*, London, 1807 ; Second Edition, 2 Vols, Madras, 1870.

Buhler, E., 'On Sakatayana's Sanskrit Grammar', *J.A.S.B.*, Vol. XXXIII, pp. 202-208, Calcutta, 1865.

Barnett, L. D., *Antagadadasāo and Anuttarovavāiyadasāo*, The Royal Asiatic Society, London, 1907.

Fleet, J. F., 'A Series of Sanskrit and Old Canarese Inscriptions relating to the Ratta Chieftains of Saundatti and Belgaum', *J.B.R.A.S*, Vol. X, p. 167-298, Bombay, 1874.

Francis, W. and Hemingway, F. R., *Madras District Gazetteers*, Madras.

Hertel, J., 'Missverstandnisse' *Wiener Zeitschrift fur die Kunde* des *Morgenlandes*, Vol. XX, pp. 113-119, Wien, 1906.

Hoernle, F. R., 'Origine et Premiers Developments du Jainisme', *Museon*, Nouvelle Serie, Vol. VII, pp. 109-134, Louvain, 1906.

The Imperial Gazetteer of India, Oxford. 1907-09
Vol. I, pp. 414-17, 473,
Vol. II, pp. 4, 6, 7-8, 56-58, 110-11, 122-24, 158, 160, 163-70, 178-79, 251, 258, 260-61, 273, 284, 317-18, 434-36.
Vol III, iv, v-xxiv, xxv, xxvi.

Jacob, Le Grand, 'Inscriptions from Palitana', *J.B.R.A.S.*, Vol. I, pp. 56-66 ; 96-103, Bombay, 1844.

Mitra, Rajendralal, 'Vestiges of the Kings of Gwalior', *J.A.S.B.*, Vol. XXXI, pp. 391-424, Calcutta, 1863.

Moore, D., *Examination of Jainism*, Surat, 1867.

Malcom, J., A *Memoir of Central India including Malwa and Adjoining Provinces*, London, 1824, 3rd Ed 1832.

Newbold, T. J., 'Notes on the Statues of the Jainas', *M.J.L.S.*, Vol. XI, pp. 306-10, Madras, 1840

Nevill, H. R., *District Gazetteers of the United Provinces of Agra and Oudh*, Allahabad
Vol. XIV, pp. 92-94.
Vol. XV, pp. 69-71.
Vol. XX, p. 82.
Vol. XXVIII, p. 76.
Vol. XXXII, pp. 74-75.

Smith, V. A., *The Early History of India*, Oxford, 1908, pp. 9,26,30, 41-42, 137, 156, 167, 172, 181, 187, 191, 285, 319, 386-88, 391, 392, 398, 409, 410, 417, 429.

Schmidt, R. and Hertel, J., 'Amitagati's Subhasitasamdoha', *Z.D.M.G.*, Vol. LXI, pp. 88-137, 298-341, 542-82, 875-908, Leipzig, 1907.

Pictorial Date Stamp of Gomatesvara

S. N. ASHOK KUMAR JAIN



When a letter is received from the postman one will see the date stamp to know from which place it is coming and when it was posted. If the curiosity is not there no one will give a glance to the date stamp impression. The round shaped and stereo-typed date stamp may not attract the eyes of the letter-receiver. But what will happen if a new designed and attractive date stamp is impressed on a letter? Certainly it will draw the attention of the eyes. The Postal Department is now coming up with this idea and providing very attractive date stamp impression at selected places to promote tourism.

The Karnataka Postal Circle has introduced special pictorial cancellation for one year during 1978 at Sravanabelagola, Belur, Halebeedu,Somanathapura,, Hampi and Nagarahole.

The statue of Gomatesvara can be seen in the date stamp used at Sravanabelagola. Since 2nd January 1978 all the letters posted at this place are despatched after affixing this date stamp impression.

It is not for the first time the Gomatesvara statue is being used for the special date stamp by the Postal Department.

In the year 1973 Hassan Philatelic Club had organised a memorial stamp exhibition in memory of the great philatelist Jal Cooper and on 15th August 1973 the cancellation depicted the statue of Gomatesvara of Sravanabelagola. (See *Jain Journal*, Vol. IX. No. 4).

Secondly during the year 1975 the Karnataka Postal Circle had organised a state-level stamp exhibition by name KARNAPEX-1975 and on the second day of the exhibition the special cancellation depicted the statue of Gomatesvara date-stamp (14th June 1975).

On both the occasions only a day was fixed for the use of the special date stamp where as this time entire year is fixed for the purpose. It will be taken back from its use from 1st January 1979.

The rich heritage of Jain monuments spied over the country can be utilised by the Postal Department in this regard.

Our Contributors

L. C. JAIN, Professor of Mathematics and Principal, Government College, Jaora, Ratlam.

CHITTARANJAN PAL, Lecturer in History, Shri Caitanya College, Habra, 24 Parganas.

MARUTI NANDAN PRASAD TIWARI, Lecturer in Ancient History, Sri Gandhi Degree College, Maltari, Azamgarh.

J. C. SIKDAR, Senior Research Officer, L. D. Institute of Indology, Ahmedabad.

P. C. DASGUPTA, Director of Archaeology, Government of West Bengal.

S. N. ASHOK KUMAR JAIN, Sub-Postmaster, Sravanabelagola.

PRAKASH TRADING COMPANY

12 INDIA EXCHANGE PLACE

CALCUTTA 1

Gram : PEARLMOON

Telephones : 22-4110, 22-3323

"जिसे भव की थकान लगी हो ...."

जिसे अनादि कालीन भव-भ्रमण की थकान लगी है, तथा जो आत्मा की लगन-पूर्वक किसी भी प्रकार आत्महित साधना चाहता है ऐसे जीव के लिए यह बात है।

चाहे जैसा बढ़िया भोजन हो, किन्तु जिसे भूख ही न लगी हो, उसे कैसे भायेगा? उसी प्रकार जिसे भव की थकावट का अनुभव नहीं होता, तथा आत्मा की भूख नहीं लगी है; उसे तो आत्मा के आनन्द की बात सुनने में भी अच्छी नहीं लगती, उसकी रुचि जाग्रत नहीं होती।

किन्तु जो जीव भव-दुःख से थक गए हैं, जिसे आत्म-शान्ति की तीव्र क्षुधा जागृत हुई है, जो सोचते हैं कि "अरे रे! यह आत्मा भव-दुःख से छूटकर चैतन्य की शान्ति कब प्राप्त करेगा", वे आनन्द की यह अपूर्व बात अपूर्व रूचि से श्रवण करके समझ जाते हैं और उनके भव की थकान उतर जाती है। उन्हे आत्मा की अपूर्व शान्ति का अनुभव होता है।

जिन्हे भव की थकान लगी हो तथा आत्मा के सुख की भूख जागृत हुई हो, उन भूखो के लिये तो यह आत्मा की बात अमृत है।

इस अमृत से अनन्त भव की क्षुधा शांत होकर अपूर्व सुख की प्राप्ति होती है।

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Registered with the Registrar
of Newspapers for India
under No. R. N. 12121/66.

Autumn 1978